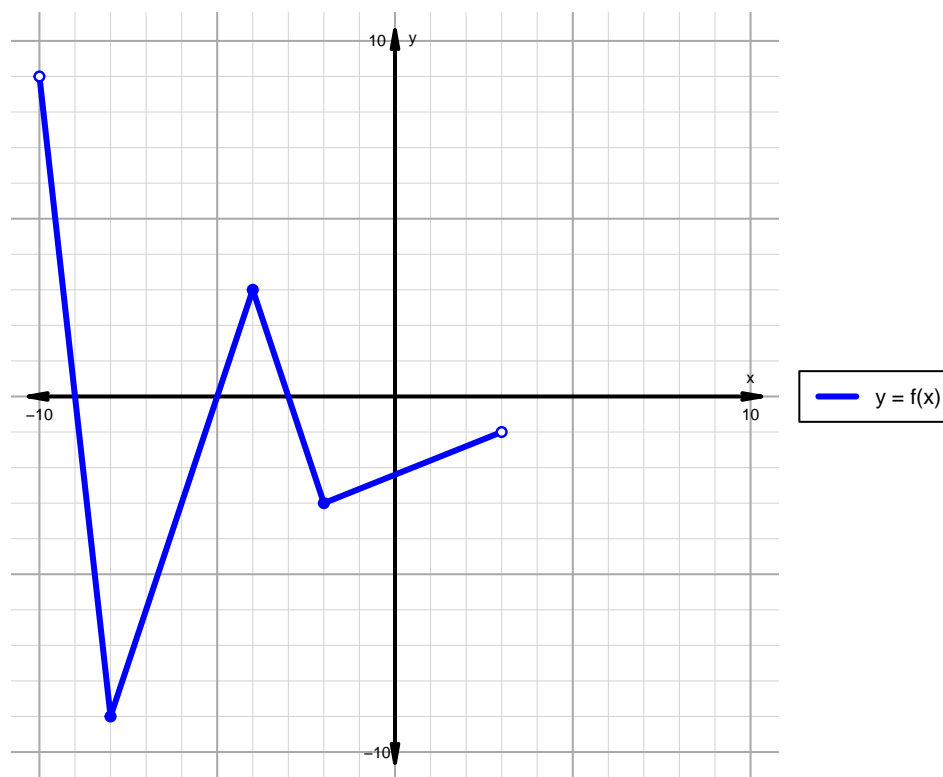


Name: _____

Date: _____

Intervals, Transformations, and Slope Solution (version 13)

1. The function f is graphed below.

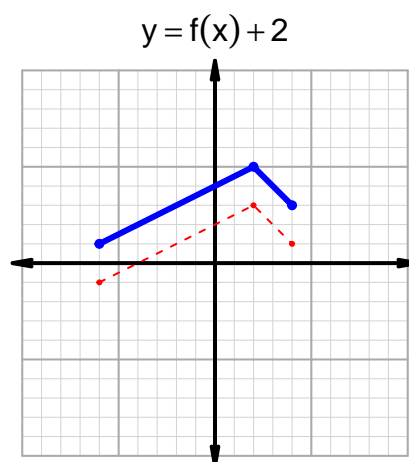
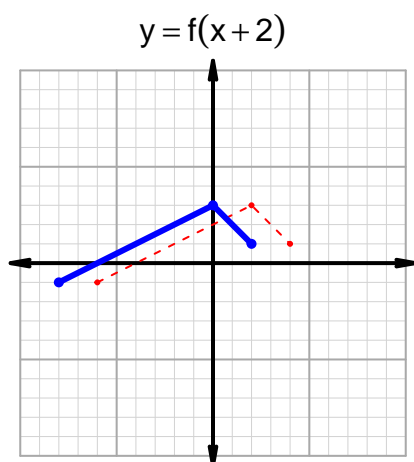
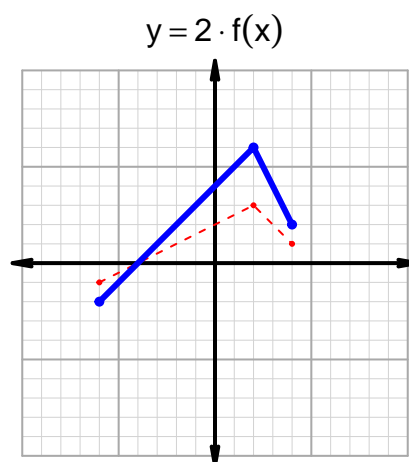
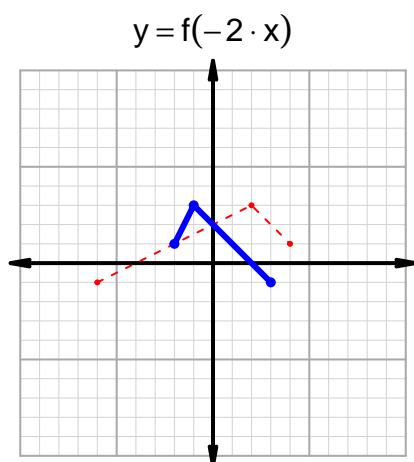


Indicate the following intervals using interval notation. Remember, you can use \cup between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-5, -3)$
Negative	$(-10, -9) \cup (-9, -5) \cup (-3, 3)$
Increasing	$(-8, -4) \cup (-2, 3)$
Decreasing	$(-10, -8) \cup (-4, -2)$
Domain	$(-10, 3)$
Range	$(-9, 9)$

Intervals, Transformations, and Slope Solution (version 13)

2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$ to find the average rate of change between $x_1 = 21$ and $x_2 = 66$. Express your answer as a reduced fraction.

x	$g(x)$
21	67
66	92
67	66
92	21

$$\frac{f(66) - f(21)}{66 - 21} = \frac{92 - 67}{66 - 21} = \frac{25}{45}$$

The greatest common factor of 25 and 45 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{9}$$